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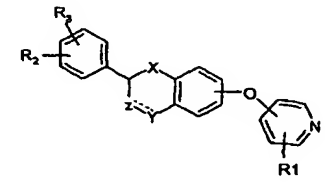
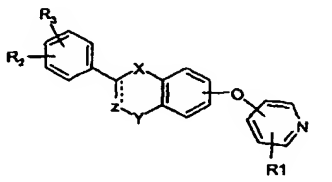
(54) Title: PYRIDINE DERIVATIVES USEFUL FOR INHIBITING SODIUM/CALCIUM EXCHANGE SYSTEM


(I)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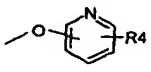
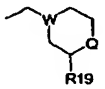

(IIIa)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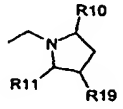
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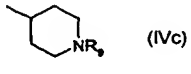
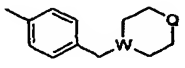

(IVc)


(IVd)


(IVe)

(57) Abstract: Therapeutically active compounds of formula (I) or (II) wherein X is -O-, -CH_2- or -C(O)-; Z is -CHR_{12}- or a valence bond; Y is -CH_2-, -C(O)-, $CH(OR_{13})$-, -O-, -S-; provided that in case Z is a valence bond, Y is not C(O); the dashed line representing an optional double bond in which case Z is -CR_{12}- and Y is -CH_2-, -C(O)- or -$CH(OR_{10})$- (in formula II) or -CH- (in formula I); R_2 and R_3 are independently H, lower alkyl, lower alkoxy, -NO_2, halogen, -CF_3, -OH, benzyloxy or a group of formula (IIIa). R_1 is H, CN, halogen, -$CONH_2$, -$COOR_{15}$, $CH_2NR_{15}R_{18}$, $NHC(O)R_5$, $NHCH_2R_5$, NHR_{20}, $NR_{21}R_{22}$, $NHC(NH)NHCH_3$ or, in case the compound is of formula (II) wherein the optional double bond exists or in case R_2 or R_3 is benzyloxy or a group of formula (IIIa) or in case the pyridine ring of formula (I) or (II) is attached to the oxygen atom in 3-, 4- or 5-position, R_1 can also be -NO_2 or $NR_{16}R_{17}$; R_4 is H, -NO_2, CN, halogen, -$CONH_2$, -$COOR_{15}$, -$CH_2NR_{15}R_{18}$, -$NR_{16}R_{17}$, $NHC(O)R_5$ or $-NHC(NH)NHCH_3$; R_5 is alkyl substituted with 1-3 substituents selected from the group consisting of halogen, amino and hydroxy, or carboxyalkyl, in which the alkyl portion is optionally substituted with 1-3 substituents selected from the group consisting of halogen, amino and hydroxyl, -CHR_6NR_8 or one of the following groups: formula (IVa), (IVb), (IVc), (IVd), (IVe), and pharmaceutically acceptable salts and esters thereof. The compounds are potent inhibitors of Na^+/Ca^{2+} exchange mechanism.

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TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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